

# INTERNATIONAL SEARCH REPORT

Inter..... Application No

PCT/GB2004/002408

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K47/48

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, CHEM ABS Data, EMBASE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	<p>WO 99/61911 A (HOSTETLER MICHAEL J ; TEMPLETON ALLEN C (US); UNIV NORTH CAROLINA (US)) 2 December 1999 (1999-12-02)</p> <p>page 6 page 8, paragraph 3 - page 9, paragraph 1 page 10, paragraph 2; claims 6,8,9,11 ----- -/--</p>	<p>1-5,11, 20-22, 25-28, 30-33, 40,52, 53,58</p>
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

### \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

17 November 2004

Date of mailing of the international search report

- 7 04 2005

Name and mailing address of the ISA

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# INTERNATIONAL SEARCH REPORT

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WO 02/32404 A (MARTIN LOMAS MANUEL ; ROJO JAVIER (ES); PENADES SOLEDAD (ES); CONSEJO) 25 April 2002 (2002-04-25)</p> <p>page 7, paragraph 1-3 page 8, paragraph 2 page 5, paragraph 2 page 28, paragraph 2; claims 1,4-6,12-16,18-23,25-35,39; figure 2</p>	<p>1,3-5, 11-15, 20-36, 40,44, 45,49, 52-56, 58,60-65</p>
X	<p>TERANISHI T. ET AL: "Fabrication of gold nanoparticle superlattices and their optical and electronic properties" GOLD, 2003, pages 978-982, XP002306166</p> <p>abstract page 980; figure 4</p>	<p>1,3-5, 11,14, 15, 20-22, 28,31, 32,40, 52-54,58</p>
Y	<p>SRIKANTH H. ET AL: "Dynamic transverse susceptibility in Au-Fe-Au nanoparticles" MATERIALS SCIENCE AND ENGINEERING, vol. 304-306, 2001, pages 901-904, XP002306167</p> <p>page 901, column 2, paragraph 2</p>	<p>1-15, 20-36, 40-46, 49, 51-56, 58,60-65</p>
Y	<p>PARK S.J. ET AL: "Synthesis and magnetic studies of uniform iron nanorods and nanospheres" J. AM. CHEM. SOC., vol. 122, 2000, pages 8581-8582, XP002306168</p> <p>page 8581, column 2, paragraph 3</p>	<p>1-15, 20-36, 40-46, 49, 51-56, 58,60-65</p>
P,Y	<p>WO 03/086660 A (US GOVERNMENT) 23 October 2003 (2003-10-23)</p> <p>page 1, paragraph 3; claims 4-7,10-12</p>	<p>1-15, 20-36, 40-46, 49, 51-56, 58,60-65</p>

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB2004/002408

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
  
Although claims 60-65 are directed to a diagnostic method practised on the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
  
1-11, 14, 15, 20-36, 40-46, 49, 51-56, 58, 60-65 (all partially), 12  
13 (all completely)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International Application No. PCT/ GB2004/ 002408

### FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 12, 13 complete 1-11, 14, 15, 20-36, 40-46, 49, 51-56, 58, 60-65 in part

Magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand incorporates a lanthanide. Excluding the subject matter of inventions 2-9

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2. claims: 16, 17, 47, 48, 57, 59 complete; 1-11, 14, 15, 20-36, 40-46, 49-56, 58, 60-65 in part

Magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand comprises a carbohydrate group (polysaccharide, oligosaccharide, monosaccharide). Excluding the subject matter of inventions 1, 3-9.

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3. claims: 18, 19 complete; 1-11, 14, 15, 20-36, 40-46, 49, 51-56, 58, 60-65 in part

Magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand comprises a glycanoconjugate (glycolipid or glycoprotein). Excluding the subject matter of inventions 1, 2, 4-9.

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4. claims: 1-11, 14, 15, 20-37, 39 in part

Use of a magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand comprises an antigen for the preparation of a medicament for vaccinating. Excluding the subject matter of inventions 1-3, 5-9.

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5. claims: 38 complete; 1-11, 14, 15, 20-37, 39 in part

Use of a magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand comprises a nucleic acid encoding an antigen for the preparation of a medicament for vaccinating. Excluding the subject matter of inventions 1-4, 6-9.

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6. claims: 1-11, 14, 15, 20-36, 40-46, 49, 50 in part

## INTERNATIONAL SEARCH REPORT

International Application No. PCT/ GB2004/ 002408

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Use of a magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand comprises a hormone or DHEA for the preparation of a medicament for treatment of cancer metastasis. Excluding the subject matter of inventions 1-5, 7-9.

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7. claims: 1-11, 14, 15, 20-36, 40-46, 49, 50 in part

Use of a magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand comprises a peptide capable of binding to a cell-specific receptor for the preparation of a medicament for treatment of cancer metastasis. Excluding the subject matter of inventions 1-6, 8, 9.

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8. claims: 1-11, 14, 15, 20-36, 40-46, 49, 50 in part

Use of a magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand comprises a lipid for binding a toll receptor for the preparation of a medicament for treatment of cancer metastasis. Excluding the subject matter of inventions 1-7, 9.

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9. claims: 1-11, 14, 15, 20-36, 40-46, 49, 50 in part

Use of a magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand comprises methylene blue for the preparation of a medicament for treatment of cancer metastasis. Excluding the subject matter of inventions 1-8.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB2004/002408

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9961911	A	02-12-1999	AU 6016999 A	13-12-1999
			CA 2329859 A1	02-12-1999
			EP 1073902 A2	07-02-2001
			WO 9961911 A2	02-12-1999
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			EP 1326589 A2	16-07-2003
			WO 0232404 A2	25-04-2002
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			US 2004052729 A1	18-03-2004
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			AU 2003209238 A1	27-10-2003
			WO 03086660 A1	23-10-2003
			US 2003190471 A1	09-10-2003
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